

**What is claimed is:**

1. A computer for synchronizing a system for aspirating and/or  
dispensing of liquid samples that comprises a microejection  
5 device and a pump, which are connected with one another via  
tubing, wherein the computer is capable of being loaded with  
activatable computer program product for synchronizing  
operation of the microejection device and the pump,  
wherein the loaded and activated computer program product di-  
10 rects the computer to control and synchronize the system:
  - a) to actively define a sample volume and dispense the defined  
sample volume using the microejection device, which is filled  
with sample liquid; and
  - b) to track a part of the pump that conveys liquid around a  
15 valve, dependent on the sample volume, which is defined and  
is actively dispensed only by the microejection device, to pre-  
vent excessive pressure differences in the microejection de-  
vice, tubing, and pump.
- 20 2. The computer according to Claim 1,  
wherein it is integrated into the system as an electronic compo-  
nent.
3. The computer according to Claim 1 or 2,  
25 wherein it can also be externally operated and a read out can be  
obtained therefrom.
4. A system for aspirating and/or dispensing liquid samples that  
comprises a microejection device and a pump that are connected  
30 with one another by a tubing, wherein the system also comprises  
a computer for loading an activatable computer program product  
that synchronizes the microejection device and pump, wherein  
said computer is a computer according to claims 1 or 2.

5. A system for aspirating and/or dispensing liquid samples that comprises a microejection device and a pump, that are connected with one another by a tubing, wherein the system also comprises a computer for loading an activatable computer program product that synchronizes the microejection device and pump, wherein said computer is a computer according to claim 3.
6. The system according to Claim 4, wherein the microejection device comprises an endpiece that is a microejection pump.
7. The system according to Claim 5, wherein the microejection device comprises an endpiece that is a microejection pump.
8. The system according to Claim 6, wherein the microejection device is a piezoelectric micropump.
9. The system according to Claim 7, wherein the microejection device is a piezoelectric micropump.
10. The system according to Claim 4, wherein the microejection device further comprises an endpiece that is a disposable pipette tip, a pulse generator, and tubing connecting the endpiece and pulse generator.
11. The system according to Claim 5, wherein the microejection device comprises an endpiece that is a disposable pipette tip, a pulse generator, and tubing connecting the endpiece and pulse generator.
12. The system according to Claim 4,

further comprising a reservoir, a three-way valve, or a reservoir and a three-way valve, with the three-way valve located between the pump and the reservoir, and the reservoir, the three-way valve and the pump being connected with one another by tubing.

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13. The system according to Claim 5,  
further comprising a reservoir, a three-way valve, or a reservoir and a three-way valve, with the three-way valve is located between the pump and the reservoir, and the reservoir, the three-way valve and the pump being connected with one another by tubing.

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14. The system according to Claim 6,  
further comprising a reservoir, a three-way valve, or a reservoir and a three-way valve, with the three-way valve is located between the pump and the reservoir, and the reservoir, the three-way valve and the pump being connected with one another by tubing.

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15. The system according to Claim 7,  
further comprising a reservoir, a three-way valve, or a reservoir and a three-way valve, with the three-way valve is located between the pump and the reservoir, and the reservoir, the three-way valve and the pump being connected with one another by tubing.

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16. The system according to Claim 8,  
further comprising a reservoir, a three-way valve, or a reservoir and a three-way valve, with the three-way valve is located between the pump and the reservoir, and the reservoir, the three-way valve and the pump being connected with one another by tubing.

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17. The system according to Claim 9,  
further comprising a reservoir, a three-way valve, or a reservoir  
and a three-way valve, with the three-way valve is located be-  
tween the pump and the reservoir, and the reservoir, the three-  
way valve and the pump being connected with one another by  
tubing.
18. The system according to Claim 10,  
further comprising a reservoir, a three-way valve, or a reservoir  
and a three-way valve, with the three-way valve is located be-  
tween the pump and the reservoir, and the reservoir, the three-  
way valve and the pump being connected with one another by  
tubing.
19. The system according to Claim 11,  
further comprising a reservoir, a three-way valve, or a reservoir  
and a three-way valve, with the three-way valve is located be-  
tween the pump and the reservoir, and the reservoir, the three-  
way valve and the pump being connected with one another by  
tubing.
20. The system according to claim 12, 13, 14, 15, 16, 17, 18 or 19,  
wherein the pump is a piston pump comprising a cylinder, a pis-  
ton, and a drive.
21. A method for synchronizing a system for aspirating and/or  
dispensing liquid samples that comprises a microejection device  
and a pump connected with one another by tubing, wherein the  
system further comprises a computer that is capable of loading  
an activatable computer program product that synchronizes the  
microejection device and the pump, wherein the loaded and acti-  
vated computer program product directs the computer to control  
and synchronize the system:

- a) to actively define a sample volume and dispense the defined sample volume using the microejection device, which is filled with sample liquid; and
- b) to track a part of the pump that conveys liquid around a valve, dependent on the sample volume, which is defined and is actively dispensed only by the microejection device, to prevent excessive pressure differences in the microejection device, tubing, and pump.
22. The method according to Claim 21, wherein dispensing of the sample volume occurs in volume-defined partial steps.
23. The method according to Claim 21, wherein tracking of the part of the pump that conveys the liquid occurs continuously or in partial steps.
24. The method according to Claim 22, wherein tracking of the part of the pump that conveys the liquid occurs continuously or in partial steps.
25. The method according to Claim 23, wherein the partial steps for tracking of the part of the pump that conveys the liquid are collected into series of steps, with a series of steps always comprising the same number of partial steps.
26. The method according to Claim 24, wherein the partial steps for tracking of the part of the pump that conveys the liquid are collected into series of steps, with a series of steps always comprising the same number of partial steps.
27. The method according to claim 21, 22, 23, 24, 25 or 26

wherein the beginning or the end of the tracking of the part of the pump that conveys the liquid occurs with a time shift relative to the beginning or the end of dispensing of the sample volume.

- 5     28.    The method according to Claim 22, 23, 24, 25, 26 or 27,  
         wherein, where a residual volume occurs due to the dispensing of  
         the sample volume and the tracking of the part of the pump that  
         conveys the liquid in partial steps, dispensing and tracking are  
         adjusted to one another so that the residual volume is always  
10       borne by the tracking of the part of the pump that conveys the  
         liquid.
29.    The method according to Claim 28,  
         wherein the residual volume borne by the tracking generates a  
15       drop in pressure in the tubing between the pump and the microe-  
         jection device and is smaller than 100 nl.
30.    The method according to Claim 29,  
         wherein a value corresponding to the residual volume is stored in  
20       the computer and is taken into account in dispensing samples fol-  
         lowing occurrence of the residual volume.
31.    A computer program product for synchronizing a system  
         for aspirating and/or dispensing liquid samples, wherein the sys-  
25       tem comprises a microejection device and a pump that are con-  
         nected with one another by tubing and wherein the system fur-  
         ther comprises a computer wherein the computer is capable of  
         being loaded with activatable computer program product for syn-  
         chronizing operation of the microejection device and the pump,  
30       and wherein this computer program product, in its activated  
         state, enables the computer to control and synchronize the sys-  
         tem:

- a) to actively define a sample volume and dispense the defined sample volume using the microejection device, which is filled with sample liquid; and
- b) to track a part of the pump that conveys liquid around a valve, dependent on the sample volume, which is defined and is actively dispensed only by the microejection device, to prevent excessive pressure differences in the microejection device, tubing, and pump.
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- 10 32. The computer program product according to Claim 31, further comprising commands for controlling a three-way valve connected upstream from the pump.
- 15 33. The computer program product according to Claim 31 or 32, further comprising commands for controlling the pump for the aspiration of a liquid.
- 20 34. The method of claim 25 wherein the number of partial steps is 8 steps.
35. The method of claim 26 wherein the number of partial steps is 8 steps.